



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Central Regional Office • 8 New Bond Street, Worcester MA 01606 • 508-792-7650

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Secretary

Martin Suuberg  
Commissioner

January 9, 2015

Mr. Bob Boulay  
Metso Automation USA, Inc.  
44 Bowditch Drive  
Shrewsbury, MA 01545

**RE: Shrewsbury**  
Transmittal No.: X262780-A1  
Application No.: CE-14-023  
Class: *SM-50*  
FMF No.: 315958  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Boulay:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed installation and operation of two new paint spray booths at your valve manufacturing facility located at 44 Bowditch Drive in Shrewsbury, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

## **1. DESCRIPTION OF FACILITY AND APPLICATION**

The Permittee manufactures ball valves, butterfly valves and actuators. During manufacturing, metal parts are machined and cleaned using compounds that contain Volatile Organic Compounds ("VOC") at various stations throughout the Facility. Some products receive a protective finish that is applied to the metal parts in a single spray booth, using VOC-containing compounds. The use of VOC-containing compounds results in emissions of VOC. Some of the VOC compounds are also listed Hazardous Air Pollutants ("HAP").

On November 26, 2006, MassDEP issued Comprehensive Plan Approval Transmittal #W072463 to the Permittee. On June 19, 2007, MassDEP issued an amended Plan Approval #W072463-A to the Permittee. On February 5, 2013, MassDEP issued Plan Approval Transmittal #X253073 to modify and supersede Plan Approval #W072463-A. On September 11, 2014, the Permittee submitted the present Application Transmittal No. X262780.

The approved project consists of removing the existing paint spray booth (existing emission unit (EU) #1) at the Facility and installing two new paint spray booths (new EU #1). Each new spray booth will have an associated drying oven. In addition, there will be a flash tunnel located between the smaller spray booth and its associated drying oven. There will be a total of five new exhaust stacks, one for each spray booth, one for the flash tunnel, and one for each drying oven.

The Permittee has succeeded in significantly reducing the VOC content of metalworking fluids, collectively listed under existing EU #2. As a result, this Plan Approval contains lower VOC emission limits for EU #2 and Facility-Wide.

On November 20, 2014, MassDEP issued Plan Approval Transmittal No. 262780. The Plan Approval contained a limit on total HAP of 4.9 tons per year, as did previous Plan Approvals, and also for the first time added a limit on single HAP of 2.4 tons per year.

On December 18, 2014, the Permittee requested that the Plan Approval be amended by removing the limit on single HAP emissions. MassDEP is in agreement with this request and hereby issues this Amended Plan Approval Transmittal No. X262780-A1, **which supersedes and replaces Plan Approval #X262780 in its entirety.**

## **2. EMISSION UNIT (EU) IDENTIFICATION**

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU#</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
1	Spray Booths (2 units), flash tunnel, and ovens (2 units), spray gun(s), associated containers, mixers and cleaning equipment	n/a	Spray Booth Filters
2	Metal Working machinery, containers, rags and various associated processes.	n/a	None

**Table 1 Key:**

EU# = Emission Unit Number  
PCD = Pollution Control Device  
n/a = not applicable

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

<b>Table 2</b>			
<b>EU#</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit</b>
1	1.	VOC	1.0 TPM, 3.6 TPY Clear Coatings: ≤10.3 pounds VOC/gallon solids Extreme Performance Coatings: ≤6.7 pounds VOC/gallon solids All Other Coatings: ≤5.1 pounds VOC/gallon solids
	2.	HAP	0.8 TPM, 3.0 TPY
	3.	PM	1.0 TPM, 1.0 TPY
2	4.	VOC	1.1 TPM, 6.8 TPY
	5.	HAP (total)	0.3 TPM, 1.9 TPY
1 & 2 Combined	6.	VOC HAP (total)	2.1 TPM, 10.4 TPY 1.1 TPM, 4.9 TPY

**Table 2 Key:**

EU# = Emission Unit Number

PM = Total Particulate Matter  
VOC = Volatile Organic Compounds  
HAP (total) = total Hazardous Air Pollutants.  
TPM = tons per month  
TPY = tons per consecutive 12-month period  
≤ = less than or equal to

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

<b>Table 3</b>	
<b>EU#</b>	<b>Monitoring and Testing Requirements</b>
1	1. The Permittee shall monitor the formulas of all paints, primers, additives, and thinners to ensure compliance with the Table 2 pound VOC/gallon solids limits.
2	2. The Permittee shall monitor the formulas of all metal-working fluids used to enable accurate calculation of VOC and HAP emissions from metal working operations.
1 & 2	3. The Permittee shall implement a comprehensive database tracking system to input all data and make all calculations necessary to calculate the VOC and HAP emissions on a monthly and 12-month rolling period basis. The Permittee shall make the database available to MassDEP for inspection upon request.
Facility-wide	4. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	5. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13

**Table 3 Key:**

EU# = Emission Unit Number  
VOC = Volatile Organic Compounds  
HAP = total Hazardous Air Pollutants  
USEPA = United States Environmental Protection Agency

Table 4	
EU#	Record Keeping Requirements
Facility-wide	1. The Permittee shall keep records and make database entries and calculations as necessary for demonstrating compliance with the VOC and HAP emission limits contained in Table 2 above.
	2. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 <sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/dep/air/approvals/aqforms.htm#report">http://www.mass.gov/dep/air/approvals/aqforms.htm#report</a> .
	3. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	4. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) approved herein on-site.
	5. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	6. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	7. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	8. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	9. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4 Key:**

EU# = Emission Unit Number  
PCD = Pollution Control Device  
SOMP = Standard Operating and Maintenance Procedure  
USEPA = United States Environmental Protection Agency  
VOC = Volatile Organic Compounds  
HAP = Total Hazardous Air Pollutants

<b>Table 5</b>	
<b>EU#</b>	<b>Reporting Requirements</b>
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a “Responsible Official” as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Central Regional Office of MassDEP, BWP Permit Chief by telephone: 508-767-2845, email: CERO.Air@massmail.state.ma.us or fax : 508-792-7621, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall report every three years to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	4. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP’s request.
	5. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	6. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

**Table 5 Key:**

EU = Emission Unit Number

#### **4. SPECIAL TERMS AND CONDITIONS**

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee is subject to and shall comply with the Special Terms and Conditions as contained in Table 6:

<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
1 & 2	1. This Plan Approval Transmittal No. X262780 replaces and supersedes the previous Plan Approval Transmittal #X253073 and all other previously issued Plan Approvals. The underlying plan applications with supporting material for the previous Plan Approvals remain applicable, where not in conflict with this Plan Approval Transmittal No. 262780.
1 & 2	2. The Permittee shall implement a good-housekeeping system for all solvent-containing materials, which shall include covering cleaning solvent containers when not in use, disposing of waste solvent in proper closed containers, and educating workers about the need to use cleaning solvents efficiently so as to minimize the generation of fugitive VOC emissions.
1 & 2	3. The Permittee shall assume that 100% of the VOC and HAP contained in products are emitted to the atmosphere, except in the following circumstances: <ul style="list-style-type: none"> <li>a. Credit should be taken for solvent shipped as waste.</li> <li>b. Assume an emission factor of 50% of the usage for d-limonene,</li> <li>c. Assume an emission factor of 20% of the usage for mineral spirits,</li> <li>d. Assume an emission factor of 10% of the usage for vegetable oil, and</li> <li>e. Assume an emission factor of 3% of the usage for heavy petroleum oils.</li> </ul>

<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
1	<p>4. The paint spray booths shall meet the following:</p> <ul style="list-style-type: none"> <li>a. The emissions shall be emitted to the ambient air through 5 stacks serving the spray booths, flash tunnel and drying ovens, with the parameters specified in Table 7.</li> <li>b. All spray guns/nozzles shall be High Volume Low Pressure ("HVLN"), or equivalent, and be maintained and operated in accordance with manufacturers' recommendations.</li> <li>c. The spray booths shall have one or more layers of dry fiber mat filter with a total thickness of at least 2 inches and achieve a particulate control efficiency of at least 97% by weight. The particulate residue captured from the paint spray operation will be removed from the Facility and disposed of at an approved solid waste disposal facility. Any hazardous waste particulate, such as nitrocellulose overspray and associated filter media must be handled and disposed of in accordance with 310 CMR 30.000 (MassDEP Hazardous Waste Regulations).</li> <li>d. The face velocity at the air filters shall not exceed 200 feet per minute.</li> <li>e. All spray gun/nozzle cleaning shall be performed inside a totally enclosed gun washer system. Cleaning of all other ancillary equipment, including feed lines/hoses and pressure pots, shall be performed in accordance with MassDEP regulations and not cause or contribute to a condition of air pollution.</li> <li>f. The stacks shall meet the following criteria: <ul style="list-style-type: none"> <li>1) Stack discharge is vertically upwards,</li> <li>2) Any rain protection shall not restrict the vertical exhaust flow, and</li> <li>3) Exhaust shall have zero percent opacity.</li> </ul> </li> </ul>
	<p>5. Prior to use of new or reformulated coating formulations, the Permittee must submit a new application and obtain written Department approval, <u>except</u> when the use of the new formulation or reformulation meets all of the following:</p> <ul style="list-style-type: none"> <li>a. All formulation components manufacturer's MSDSs are kept on-site,</li> <li>b. An up-to-date as-applied VOC content determination, in pounds of VOC per gallon of solids and pounds of VOC per gallon of coating, is maintained on-site,</li> <li>c. An up-to-date as-applied HAP content determination, in pounds of HAP per gallon of coating, is maintained on-site, and</li> <li>d. The use of the new formulation or reformulation complies with all conditions of this plan approval, including provisions that prohibit visible emissions or odor nuisance conditions.</li> </ul>
2	<p>6. Emissions from EU #2 (the metal working process) shall be vented through general building ventilation.</p>



<b>Table 6</b>	
<b>EU#</b>	<b>Special Terms and Conditions</b>
1 & 2	<p>7. Credit for VOC and/or HAP recovered/reclaimed and shipped off-site as hazardous waste, or disposed of by other lawful means, may be taken, providing that the following is maintained on-site:</p> <ul style="list-style-type: none"> <li>a. Appropriate documentation of the volume of the waste shipped,</li> <li>b. VOC and/or HAP concentration of the waste shipped, and</li> <li>c. Recovery and disposal operations are in compliance with MassDEP hazardous waste regulations.</li> </ul> <p>Volume of waste shipped may be documented by maintaining copies of complete and signed hazardous waste manifests and/or Bills of Lading. VOC/HAP concentration in the waste must be supported by documentation of hazardous waste profiles and/or test data, representative of the waste shipped.</p>

**Table 6 Key:**

EU# = Emission Unit Number

VOC = Volatile Organic Compounds

HAP = Total Hazardous Air Pollutants

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Dimensions Inches</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
1 (Two stacks, one per spray booth)	38	24	40-70	60-90
1 (Flash Tunnel)	42.5	18	25-35	60-90
1 (Two stacks, one per oven)	37	12	150-200	140-160

**Table 7 Key:**

EU = Emission Unit Number

°F = Degree Fahrenheit

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or

town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact Paul Dwiggins by telephone at 508-767-2760, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Roseanna E. Stanley  
Acting Permit Chief  
Bureau of Air and Waste

Enclosure

ecc: Shrewsbury Board of Health  
Shrewsbury Fire Department  
MassDEP/Boston - Yi Tian  
Matt Melvin, Capaccio Environmental